



Sustainability and environmental awareness in reproductive medicine: a call for action

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Introduction

Climate change and loss of biodiversity have been advocated by Lancet as the biggest threat to human health for our century^[1], and this warning involves human reproductive health, too^[2]. It is believed that such threat is caused mostly by anthropogenic GreenHouse Gas (GHG) emissions^[3]. Paradoxically, healthcare systems, whose goal is to promote and guarantee health among citizens, are surely responsible for a part of global carbon footprint^[4]. Recent publications have called for an emergency action to reduce healthcare systems environmental footprint^[5], even in the gynaecological field^[6]. As for reproductive medicine, an important open debate is how to make laboratories truly sustainable^[7], but it is not known yet whether clinicians and embryologist are aware of the significant environmental footprint regarding the care they provide in their everyday clinical practice.

Objectives

To explore the sustainability interest and environmental awareness among fertility staff members and to evaluate whether the internal awareness of appropriateness and sustainability is shared among colleagues from different centers, a survey was sent via email to Humanitas Fertility Center staff and to the SIFES-MR (Italian Society of Fertility, Sterility, and Reproductive Medicine) members.

Results

A total of 87 individuals responded to the survey, up to 451 sent emails (answer rate 19.29%), over a three weeks' period. Even with a such low response rate, up to 64.37% of participants believed that there was avoidable resource waste in their clinical activity, while 28.74% reported an excess of unnecessary diagnostic tests. In this context, 70% of respondents were inclined to adopt more sustainable policies. In fact, a common interest in implementing material recycling (84.00%) emerged, using sterilizable materials (77.46%) and reducing the use of disposable materials (82.76%). Moreover, the analysis showed that demographic and professional factors did not significantly influence opinions on the safety, effectiveness, medico-legal relevance and environmental sustainability of healthcare practices. Regarding the factors that most influence clinical practice decisions, effectiveness and safety were identified as the most important ones (in 91.95% and 93.10%, respectively, of the respondents). Environmental issues, on the other hand, significantly influence clinical practice for 37.93% of respondents.

Conclusion

Healthcare staff showed a strong interest and awareness regarding environmental sustainability, highlighting a willingness to review and modify their clinical practices in response to this need, as well as to adapt and revise corporate policies. This positive attitude provides a solid foundation for the initiation of concrete changes in daily practices, which have so far been only theoretical. An immediately actionable source of GHG emissions could reside in the reduction of inappropriate and avoidable tests, procedures, tools and treatments used in clinical practice. It is evident that the awareness campaigns already carried out have had a positive impact, raising genuine awareness among professionals, who are now motivated to adopt practical measures and translate good intentions into real actions, thus contributing to an evolution of clinical practice towards a more sustainable direction.

Bibliography

- 1 Costello A, Abbas M, Allen A, et al. Managing the health effects of climate change: Lancet and University College London Institute for Global Health Commission. *Lancet*. 2009;373(9676):1693-733.
- 2 Segal TR, Giudice LC. Systematic review of climate change effects on reproductive health. *Fertil Steril*. 2022;118(2):215-23.
- 3 Costello A, Romanello M, Hartinger S, et al. Climate change threatens our health and survival within decades. *Lancet*. 2023;401(10371):85-7.
- 4 Fourt D, Poirier C. Healthcare and climate change: do no harm. *Healthc Q*. 2016;19(3):37-43.
- 5 Atwoli L, H Baqui A, Benfield T, et al. Call for emergency action to limit global temperature increases, restore biodiversity and protect health. *BMJ Open*. 2021;11(9):e056565.
- 6 Thiel C, Duncan P, Woods N. Attitude of US obstetricians and gynaecologists to global warming and medical waste. *J Health Serv Res Policy*. 2017;22(3):162-7.
- 7 Farlie F, Palmer GA, Cohen J, et al. Sustainability in the IVF laboratory: recommendations of an expert panel. *Reprod Biomed Online*. 2024;48(1):103600.